Annual Report of Operations for Year 2017

To comply with NPDES General Permit No. WAG130000 for Federal Aquaculture Facilities and Aquaculture Facilities Located in Indian Country within the Boundaries of the State of Washington

NPDES # for your Facility:
WAG 130004

Facility & Owner Information

Facility Name:
Makah National Fish Hatchery

Operator Name (Permittee):
Makah National Fish Hathcery

Address:
Mailing Address: PO Box 739, Neah Bay WA, 98357
Physical Address: 897 Hatchery Road, Neah Bay WA, 98357

Email: benjamin_gilles@fws.gov
Phone: (360) 645-2521

Owner Name (if different from operator):

Email:
Phone:

Best Management Practices (BMP) Plan

Has the BMP Plan been reviewed this year? ■ Yes ☐ No

Does the BMP Plan fulfill the requirements of the General Permit? ■ Yes ☐ No

Summarize any changes to the BMP Plan since the last annual report. Attach additional pages if necessary.
No changes made to the BMP in 2017.

Operations and Production

Total harvestable weight produced in the past calendar year in pounds (lbs):	61,653
Pounds of food fed to fish during the maximum month:	11,744

List the species grown or held at your facility and the annual production of each in gross harvestable weight. If fish were released rather than harvested, list the weight at time of release.

Species	Fish Produced	Receiving Water(s) to which Fish were Released	Month Released/ Spawned
Fall Chinook	32,134	Tsoo Yess River	May
Winter Steelhead	20,317	Tsoo Yess River	April
Coho	9,202	Tsoo Yess River	April

Fill in the table below with production numbers from the past year. List the **maximum** amount of fish on-site and the maximum amount of food fed **per month**.

Month	Total Fish (lbs)	Fish Feed (lbs)	Month	Total Fish (lbs)	Fish Feed (lbs)
January	17,791	2,024	July	6,029	2,418
February	22,560	4,096	August	8,679	1,908
March	31,449	7,123	September	11,852	2,688
April	50,305	11,349	October	16,318	4,369
May	33,955	11,744	November	18,781	2,132
June	4,051	1,884	December	23,554	2,856

Additional Comments:

lid Waste Disposal

:ribe the solid waste disposed of during the calendar year (including fish mortalities).

Type of Solid Disposed	Date Disposed	Location Disposed
Brood Stock Carcasses	Sept.-Dec. 2017	Hatchery Grounds

:ional Comments:

h Mortalities

ıde a description and the dates of mass mortalities in the past year (more than 5% per week).
:h additional pages, if necessary. Include total mortalities from all causes.

Date	Cause of Deaths	Steps Taken to Correct Problem	Pounds of Fish

ional Comments:

nass mortalities in 2017.

Noncompliance Summary

Include a description and the dates of noncompliance events (including spills), the reasons for the incidents, and the steps taken to correct the problems. Attach additional pages, if necessary.

No periods of noncompliance in 2017.

Inspections & Repairs for Production & Wastewater Treatment Systems

Date Inspected	Date Repaired	Description of System Inspected and/or Repaired
Daily	As Needed	Indoor fiberglass rearing tanks and outdoor concrete raceways
Daily	Throughout 2017	Tail screens of outdoor concrete raceways modified to include a 16" quiescent zone
Weekly	As Needed	Pollution abatement pond and associated serpentine channel

Aquaculture Drugs and Chemicals

Please indicate whether you used each drug/chemical **during the past calendar year.**
Describe the use of each drug/chemical in more detail on the following pages.

Used in the past year?	Drug or Chemical
☐ Yes ■ No	Azithromycin
☐ Yes ■ No	Chloramine-T: ***See additional reporting requirements on page 7***
■ Yes ☐ No	Chlorine
☐ Yes ■ No	Draxxin
☐ Yes ■ No	Erythromycin - injectable
☐ Yes ■ No	Erythromycin - medicated feed
■ Yes ☐ No	Florfenicol (Aquaflor)
■ Yes ☐ No	Formalin - 37% formaldehyde: ***See additional reporting requirements on page 7***
☐ Yes ■ No	Herbicide - describe:
☐ Yes ■ No	Hormone - describe:
☐ Yes ■ No	Hydrogen Peroxide: ***See additional reporting requirements on page 7***
■ Yes ☐ No	Iodine: ***See additional reporting requirements on page 7***
☐ Yes ■ No	Oxytetracycline
☐ Yes ■ No	Potassium Permanganate: ***See additional reporting requirements on page 7***
☐ Yes ■ No	Romet
☐ Yes ■ No	SLICE (emamectin benzoate)
■ Yes ☐ No	Sodium Chloride - salt
☐ Yes ■ No	Vibrio vaccine
☐ Yes ☐ No	Other:
☐ Yes ☐ No	Other:

Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: Parasite-S		Generic Name: Formalin	
Reason for use: Control of external protozoa and fungi on eggs			
☐ Preventative/Prophylactic ■ As-needed	Total quantity of formulated product per treatment (specify units) up to 76,320 mL	Total quantity of formulated product used in past year (specify units): 3,025 gallons	
Date(s) of treatment: Throughout 2017			Total number of treatments in past year: 226
Maximum daily volume of treated water: 8.6 cfs	Treatment concentration (specify units): see below	Duration and frequency of treatment(s): see below	
Method of application:	■ Static Bath ■ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	■ Raceways ■ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	☐ Discharged w/o treatment ■ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: For the control of ich = flow thru at 25-40 ppm for 7.5 - 24hr, for costia = static bath at 167 ppm for 1 hr, for control of fungus on eggs = flow thru at 1,600 ppm for 15 min.			

Brand Name: Aquaflor		Generic Name: Florifenicol	
Reason for use: Control of *Flavobacterium psychrophilium* and *Aeromonas salmonicida*			
☐ Preventative/Prophylactic ■ As-needed	Total quantity of formulated product per treatment: up to 180 grams	Total quantity of formulated product used in past year (specify units): 285 grams	
Date(s) of treatment: 8/9-18/17 and 8/11-20/17			Total number of treatments in past year: 2
Maximum daily volume of treated water: 10.7 cfs	Treatment concentration (specify units): 908 g/ton	Duration and frequency of treatment(s): 10 day treatment	
Method of application:	☐ Static Bath ☐ Flow-through	■ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	■ Raceways ☐ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	☐ Discharged w/o treatment ■ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			

Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: Ovadine		Generic Name: Buffered PVP Iodine	
Reason for use: Fish egg disinfectant			
■ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment (specify units) up to 8,192 mL	Total quantity of formulated product used in past year (specify units): 5 gallons	
Date(s) of treatment: 1/4,9/27,10/11,10/25,11/16,11/30,12/20/17			Total number of treatments in past year: 7
Maximum daily volume of treated water: 0.14 cfs	Treatment concentration (specify units): 75 ppm	Duration and frequency of treatment(s): one static bath for 20 minutes	
Method of application:	■ Static Bath ☐ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	☐ Raceways ■ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	☐ Discharged w/o treatment ■ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			

Brand Name: Salt		Generic Name: Sodium Chloride	
Reason for use: Improve osmoregulation in elevated water temperatures			
■ Preventative/Prophylactic ☐ As-needed	Total quantity of formulated product per treatment: up to 300 lbs	Total quantity of formulated product used in past year (specify units): 12,300 lbs	
Date(s) of treatment: Throughout summer (July-September) 2017			Total number of treatments in past year: 10
Maximum daily volume of treated water:	Treatment concentration (specify units): up to 0.4%	Duration and frequency of treatment(s): see below	
Method of application:	☐ Static Bath ■ Flow-through	☐ Medicated Feed ☐ Other (describe):	
Location in facility chemical was used (check all that apply):	■ Raceways ☐ Incubation building	☐ Ponds ☐ Off-line settling basin	☐ Other (describe):
Where did water treated with this chemical go? (check all that apply):	☐ Discharged w/o treatment ■ Settling basin	☐ Septic System ☐ Publicly owned treatment works	☐ Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: Salt would be applied to the raceway at desired level and would remain until dissolve			

Aquaculture Drugs and Chemicals (cont'd)

Additional Reporting Requirements for Water-Borne Treatments

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
- EPA recognizes that water-borne treatments may vary in the volume of the vessels treated, concentration, quantity of product, etc. Permittees must provide the information listed in the following tables for a reasonable worst case (i.e., maximum effluent concentration) scenario, not for each individual treatment.
- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments	
Tank Volume	Liters
Desired Static Bath Treatment Concentration	µg/L
Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

Flow-Through Treatments	
Tank Volume	Liters
Calculated Flow Rate	Liters/Minute
Duration of Treatment	Minutes
Desired Flow-Through Treatment Concentration of Product	µg/L
Amount of Product to Add Initially	Liters Product
Amount of Product to Add During Treatment	mL/Minute
Total Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

Formalin

Static Bath Treatments	
Tank Volume	68,470 Liters
Desired Static Bath Concentration	167,000 µg/L
Volume of Product Needed	11.5 Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 169 ppm Active Ingredient: 63 ppm
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per Day	3,500 gpm
Maximum % of Facility Discharge Treated	0.14 % of Total Discharge

Worst case scenario: Raceway summer costia treatment
Volume in Liters 68,470 (18,087 gallons)
Treatment rate 167,000 ppb or 167 ppm
Volume of formalin 11478.01 grams 11.47801 Liters

Effluent concentration 169 ppm solution

63 ppm A.I.

Percent of Total Discharge 0.086633

Flow-Through Treatments	
Tank Volume	68,470 Liters
Calculated Flow Rate	2,730 Liters/Minute
Duration of Treatment	1440 Minutes
Desired Flow-Through Treatment Concentration of Product	40,000 µg/L
Amount of Product to Add Initially	0 Liters of Product
Amount of Product to Add During Treatment	91 mL/Minute
Total Volume of Product Needed	131.3 Liters of Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 7 ppm Active Ingredient: 3 ppm
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	3,500 gpm
Maximum % of Facility Discharge Treated	1.59 % of Total Discharge

Worst case scenario: Raceway summer ich treatment
Volume in Liters 68,470 (18,087 gallons)
Flow rate 600 gpm = 2730 liters per min
Volume of formalin 131328 grams 131.328 Liters

Amount added during treatment 91 mL/min

Effluent concentration 7 ppm solution
3 ppm A.I.

Percent of Total Discharge 0.991234

Ovadine

Static Bath Treatments	
Tank Volume	15,857 Liters
Desired Static Bath Concentration	75,000 µg/L
Volume of Product Needed	1.2 Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 79 ppm Active Ingredient: 8 ppm
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per Day	4,200 gpm
Maximum % of Facility Discharge Treated	0.001 % of Total Discharge

Worst case scenario: Incubator stack of Heath Trays
Volume in Liters 15,857 (4,189 gallons)
Treatment rate 75,000 ppb or 75 ppm
Volume of ovadine 1193.865 grams 1.193865 Liters

Effluent concentration 79 ppm solution

8 ppm A.I.

Percent of Total Discharge 0.007509

Changes to the Facility or Operations

Describe any changes to the facility or operations since the last annual report.
No changes to the facility or operations since the last annual report.

Signature and Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly evaluate and gather the information submitted. Based on my inquiry of the person or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Ben Gilles	Project Leader, Makah NFH
Printed name of person signing	Title
	1/3/18
Applicant Signature	Date Signed

Submittal Information

Send the complete, signed information, along with any attachments, to the following address:

U.S. EPA Region 10, OWW-191

Washington Hatchery Annual Report

1200 Sixth Avenue, Suite 900

Seattle, WA 98101-3140